

10. On some new Pentastomids from the Zoological Society's Gardens, London. By MARY L. HETT, B.Sc., F.Z.S., Demonstrator of Zoology at Bedford College for Women, University of London,

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While reporting on the Pentastomids obtained from the Zoological Society's Gardens during the past twelve months, I have observed a certain number of individuals which apparently belong to new species or varieties.

1. POROCEPHALUS GRANDIS, sp. n. (Text-figs. 1, 2.)

There were in all seven specimens of this Pentastomid obtained from African vipers, viz.:—

- 1 ♂ and 1 ♀ from *Bitis gabonica*.
- 4 ♀'s from *Cerastes cornutus*.
- 1 ♀ from *Bitis nasicornis*.

The male specimen is probably mature, the female specimens are certainly so, the uterus in all cases containing embryos in different stages of development.

The female specimens (text-fig. 1, A) vary in length from 78 to 94 mm., the average length being 82 mm. The width is 8 to 9 mm. There are 22 strongly projecting rings on the body and 2 or 3 indistinct ones on the head. Stigmata are numerous over the entire surface of the body.

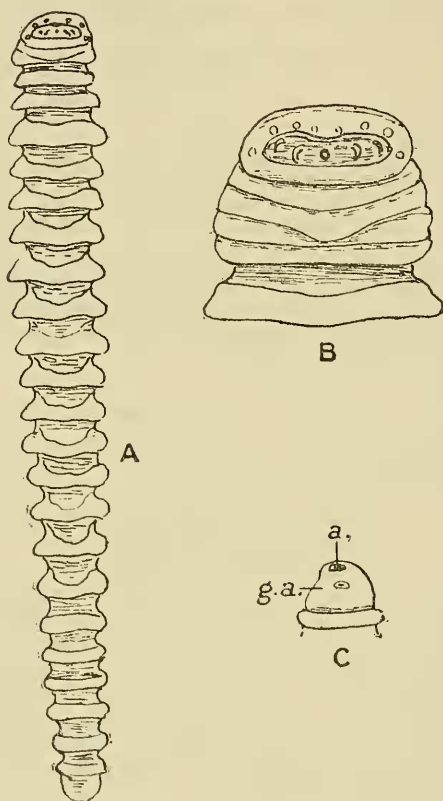
The single male specimen is 30 mm. long. The rings number about 26.

The hooks are simple and, together with the mouth, lie in a pit bordered by papillæ. The pit may be due to contraction after death, but this seems hardly likely, as it is found in all the specimens. The mouth is nearly circular and lies between the inner pair of hooks (text-fig. 1, B).

The body tapers towards the posterior end. The terminal segment is small and conical; it bears the transverse, slit-like anus, in front of which lies the genital aperture in the female (text-fig. 1, C).

The internal organs are, on the whole, typical, but in the female the anterior third of the ovary is paired. The ovary thus constitutes a Y-shaped structure, each arm of the Y passing directly into the oviduct of that side (text-fig. 2). I can find no mention of this condition in any other species.

Text-figure 1.

*Porocephalus grandis*.

A. Female specimen, nat. size.      B. Cephalothorax,  $\times 4$ .  
C. Terminal segment,  $\times 2$ .

*a.*, anus; *g.a.*, genital aperture.

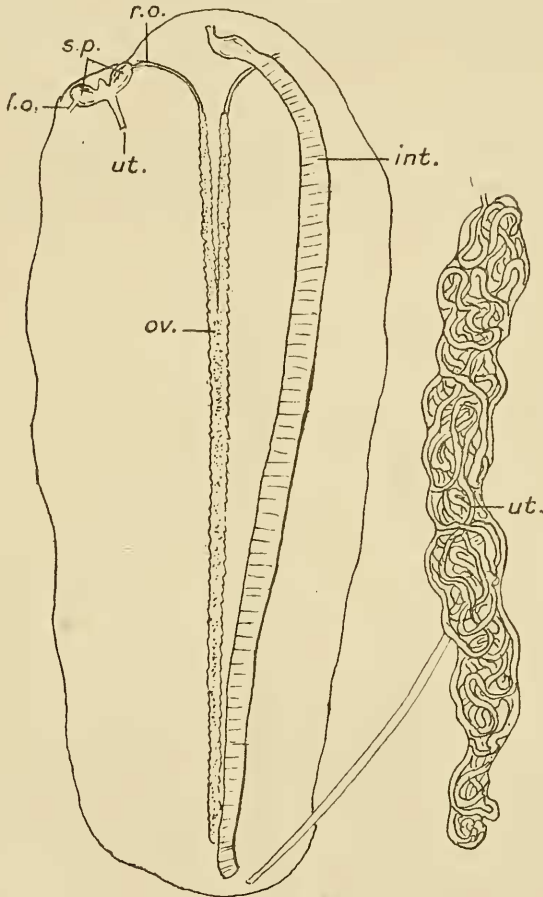
In general features the specimens bear a strong resemblance to *Porocephalus armillatus* Wyman, but differ from it in the following particulars:—

- (1) The body is relatively thicker than in *P. armillatus*.
- (2) The papillæ are differently arranged, and the two conspicuous

papillæ in front of the mouth in *P. armillatus* are replaced by a small lobe.

(3) The hooks are sunk in a pit and not so wide apart; the space between the two inner hooks is also relatively greater.

Text-figure 2.

*Porocephalus grandis.*

Female specimen dissected from the ventral side, slightly enlarged.

*int.*, intestine; *l.o.*, cut end of left oviduct; *ov.*, ovary; *r.o.*, right oviduct; *sp.*, spermatheca; *ut.*, uterus.

(4) The rings are not so sharply defined. In the female there are 22 distinct ones and 2 or 3 indistinct, instead of 19 altogether,

and the postero-ventral margin of each ring has a slight projection in the median line instead of an indentation. Further, Wyman gives the number of rings in the male of *P. armillatus* as "14 distinct rings and 4 partly defined," while here there are 26.

(5) The anal segment is more obtuse.

Through the courtesy of the authorities at the British Museum (Natural History), I was able to look through a small collection of Pentastomids in their possession. Among these specimens was one unnamed, from the horned viper or puff-adder. From a superficial observation it appeared to agree in all respects with the species described above.

## 2. POROCEPHALUS GLOBICEPHALUS, sp. n. (Text-fig. 3.)

A single mature female specimen from the lung of the Mocassin Snake (*Tropidonotus fasciatus*).

Text-figure 3.



*Porocephalus globicephalus*, ♀. × 2.

The length of the body is 50 mm. and the number of annulations is about 50.

The hooks are simple and sharply curved. The mouth is pear-shaped with a pointed anterior end. The head is globular and divided from the body by a well-marked neck. The anus is a wide transverse slit on the terminal segment.

This is a North-American species, but it greatly resembles the Indian species *P. pattoni* Stephens. The main points of difference are the greater number of rings, *P. pattoni* having only 36; and also the position of the anus, which is more nearly terminal in *P. globicephalus*.

### 3. POROCEPHALUS BIFURCATUS Diesing. (Text-fig. 4, A.)

The identification of Diesing's species is a task of some difficulty, because, as pointed out by Leuckart, he almost certainly described immature specimens. He gives the length of the female as 20-22 mm. and the number of annulations as 40, though, in the first edition of his Monograph, he figures about 100. This apparent discrepancy may be due to the fact that in some cases the body contracts in such a way as to make the rings appear double. He also describes the hooks as geminate.

Among the Pentastomids sent to me from the Zoological Society's Gardens are seven which I take to be *P. bifurcatus* (text-fig. 4, A): one is from *Boa imperator* and six from *Coluber melanoleucus*. Like Diesing's specimens they are all from the New World, and they agree with his diagnosis, except in so far as regards:—(1) length, (2) number of annulations, (3) geminate hooks. The specimens in question are from about 30 to 40 mm. in length. In most cases the annulation is obliterated, but in three cases it is visible and the rings number 26, 33, and 37 respectively. The hooks are single.

But these are exactly the differences which ordinarily occur between immature and adult forms, the geminate hooks especially being a larval character.

I cannot find any essential distinction between these forms and the African species named *P. bouleengeri* by Vaney and Sambon (text-fig. 4, B), specimens of which I have described in detail in a paper to appear shortly. Dr. Sambon points out\* that "difference of realm is a powerful argument in favour of diversity of species," but in this case the African and New World species resemble each other so closely that it would seem impossible to distinguish them as separate species †. So that if my identification of the specimens mentioned above with *Porocephalus bifurcatus* be correct, the African specimens must be regarded merely as a new variety of that species.

\* Trans. Soc. Trop. Med. Liverpool, vol. iii. 1910, pp. 132-140.

† Text-fig. 4, A, is taken from the specimen from *Boa imperator*. It appears relatively longer and more slender, but this is only due to greater extension. The specimens from *Coluber melanoleucus* resemble "*P. bouleengeri*" even more closely.

4. *POROCEPHALUS BIFURCATUS* var. *ORIENTALIS*, nov. (Text-fig. 4, C, D.)

There were 16 specimens obtained as follows:—

1 ♀ from *Zamenis mucosus*. (There were also 3 specimens of *P. pattoni* in the same snake.)

11 ♀'s from *Naia tripudians*.

4 ♂'s from *Naia tripudians*.

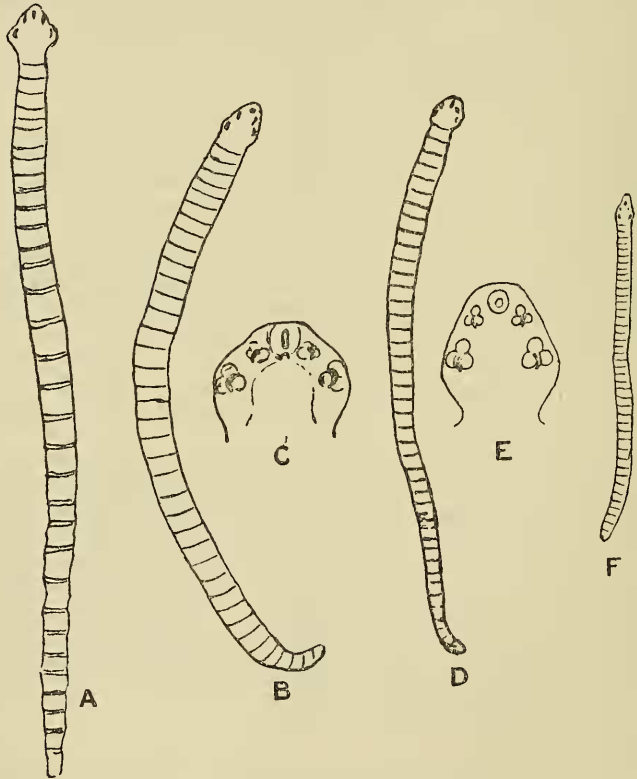
They differ from *P. bifurcatus* in the following particulars:—

(1) The body is relatively more slender.

(2) The rings are 40 or occasionally more in number, while in *P. bifurcatus* they are usually under 40.

(3) The mouth is more oval and the anterior end of the cephalothorax is slightly more rounded.

Text-figure 4.



A. *Porocephalus bifurcatus*, ♀, × 2. B. "*P. bouleengeri*," ♀, × 2. C. Head of *P. bifurcatus* var. *orientalis*, × 8. D. *P. b.* var. *orientalis*, ♀, × 2. E. Head of *P. bifurcatus* var. *mediterraneus*, × 10. F. *P. b.* var. *mediterraneus*, ♀, × 2.

5. *POROCEPHALUS BIFURCATUS* var. *MEDITERRANEUS*, nov. (Text-fig. 4, E, F.)

There were 10 specimens, all from *Zamenis gemouensis*: viz. 4 females, 2 males, and 4 small specimens much contracted, which are also probably males.

The body is relatively more slender than in var. *orientalis*, and much darker in colour: The length of the males varies from 10 to 15 mm., that of the females from 20 to 30 mm.

The annulations are 40 to 45.

In conclusion, my thanks are due to the authorities of the Zoological Society for placing the material at my disposal and to Dr. H. W. Marett Tims for his advice and assistance.